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6. ACCIDENT INVESTIGATION

6.1 INTRODUCTION

Accident: An unplanned event that interrupts the completion of an activity.

6.2 PURPOSE

All accidents, no matter how minor, should be reported. Even if there was no property damage or injury, a near miss that had the potential for a serious accident should be reported. This does not mean that all accidents and near misses have to be fully investigated. But when there is a good accident reporting system, it will show trends and patterns which can be used to prevent serious accidents. Accident reports will also improve awareness and establish costs.

6.3 WHO INVESTIGATES:

All accidents will be investigated by the supervisor. This section of the safety program should be reviewed for every accident investigation to help identify root causes and appropriate corrective actions.

Class C and D (Ch. 5) mishaps with the potential of being more severe will be investigated by a Division or Department Safety Representative that has received accident investigation training or a team including the supervisor and at least one trained investigator. Management can also be represented.

All Class A and B mishaps will be investigated by or with the assistance of the County Safety Administrator.

6.4 INVESTIGATION PROCESS

- A. **Safe to Enter Area:** Ensure no hazard still exists that may cause further injury or property damage before entering the area of the accident.
- B. **Medical Attention:** Ensure injured personnel receive first aid and call an ambulance as soon as possible if required.
- C. **Secure the Area:** Keep unauthorized personnel out of the area to prevent other injuries and protect evidence.
- D. **Identify Witnesses:** Get names, addresses and phone numbers of all witnesses. A valuable witness does not necessarily have to have seen the accident. Someone who has knowledge of pre-accident conditions or saw the victim before the accident could have important information for the investigation.
- E. **Develop Visual Aids:** Take photographs and measurements; make

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sketches.

F. Procure hard Evidence: Search the accident scene for evidence. Collect and save hard evidence for further evaluation.

G. Review Records and Reports

1. Check for training documentation
2. Review for timeliness, applicability and content
3. Review maintenance records
4. Review inspection reports

H. Conduct Interviews

1. As soon as possible
2. Write down key questions before starting
3. When feasible conduct interviews at the scene
4. Interview witnesses privately
5. State the purpose of the interview: prevention
6. Ask for their version of what happened
7. Listen to witness, don't interrupt
8. Discuss ideas on prevention
9. Close positively, thank the individual

I. Write the Report

1. Identify the source of injury/damage. What object or substance caused the injury/damage. What part of the object caused the injury/damage and how? Identify the chemical or liquid. Identify the motion if it caused the injury/damage.
2. Identify unsafe acts. In most accidents an unsafe act occurs and should be identified. Unsafe acts are symptoms of underlying root causes.
3. Identify specific hazardous conditions, environment, people or

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management system that could be a contributing factor. (See "Causal Factors and Possible Corrective Actions")

ROOT CAUSES of accidents usually fall under one of the following categories:

- Inadequate training
- Poor enforcement
- Failure to inspect
- No written job specifications/procedures
- Dubious purchasing methods
- Employee selection is questionable

4. Identify expert assistance where needed. An engineering analysis of structural strength or an analysis of the dynamics may be required. An unknown substance may need identifying. Contact your Safety Representative or the Monroe County Safety office for help.

5. Consolidate all information. Put all information together and accurately reconstruct the accident. Go through each phase: conditions before the accident, events steps during the accident sequence, and conditions after the accident. Identify what could have prevented the accident in each phase.

6. Develop corrective/preventative actions. (See Causal Factors and Possible Corrective Actions) The main purpose of the investigation is to prevent it happening again. Chapter 5 has the four levels of Corrective Actions

The higher the level of corrective action, the higher the level of Safety. Levels 1 and 2 actions, while preferred over Levels 3 and 4, cost money and take a lot of time and must be supplemented by at least Level 4 actions to reduce the risk in the interim. Some Accident Investigation Reports should contain recommendations for all four corrective action levels. You, as the supervisor, are responsible for taking Level 4 actions as soon as possible.

7. Complete the Accident Investigation Report. Follow instructions on the back of the form; fill in all sections (N/A or none where appropriate). Avoid using jargon or acronyms that may not be understood by reviewers of the report. Use extra sheets of paper. A thorough report, in most cases, will not fit on the report form. All Accident Investigation Reports will be reviewed by the Safety Administrator. Any comments and recommendations by the Safety Administrator will be returned to the supervisor that completed the report. Excellent reports will be recognized.

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NOTE: Accidents that are prevented eliminate the need for an investigation and report. Let's concentrate on preventing accidents.

8. Follow-up. Make sure corrective actions are accomplished and are effective. Schedule inspections.

J. Accident Costs

Direct (obvious) costs are only a small fraction of the total costs of an accident. Indirect (hidden) costs account for three to seven times the direct costs. Actual costs include all or part of the following:

- Medical compensation
- Hospital medical costs
- Property/equipment damage
- Equipment down time
- Lost efficiency
- Investigation/report time (supervisor and others)
- Scrap/rework
- Overtime premium
- Training for new personnel
- Management time to review reports
- Clerical time spent on accident
- Time paid to injured employee
- Other employees' time
- Costs associated with light duty
- Insurance costs
- Public liability claims
- Cost of renting equipment
- Medical costs not covered by Workers Compensation insurance

6.5 CAUSAL FACTORS AND POSSIBLE CORRECTIVE ACTIONS

A. Hazardous Condition As a Contributing Factor

1. Defect in Equipment: Review procedure for inspecting, reporting, maintaining, repairing, replacing, or recalling defective equipment/tool/material used.
2. Hazardous conditions not recognized: Perform job safety analysis. Improve employee ability to recognize existing or potential hazardous conditions. Provide test equipment, as required, to detect hazard. Review any change or modification of equipment/tool/material.
3. Hazardous Condition Not Reported: Train employees in reporting

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procedures. Stress individual acceptance of responsibility.

4. Employees Not Informed of Hazardous Condition and Unfamiliar with Interim Avoidance Procedures: Review job procedures for hazard avoidance. Review supervisory responsibility. Improve supervisor-employee communications.
5. No Equipment Inspection Procedure to Detect the Hazardous Condition: Develop and adopt procedures to detect hazardous conditions. Conduct test.
6. Existing Equipment Inspection Procedures Did not Detect the Hazardous Condition: Review procedures. Change frequency or comprehensives. Provide test equipment as required. Improve employee ability to detect defects and hazardous conditions. Change job procedures as required.
7. Incorrect Equipment, Tool or Material Used: Specify correct equipment, tool, material in job procedures.
8. Correct Equipment, Tool or Material Not Readily Available: Provide correct equipment, tool or material. Review purchasing specifications and procedures. Anticipate future requirements.
9. Employees Unsure Where to Obtain Required Equipment, Tool or Material: Review procedures for storage, access, delivery, or distribution. Review job procedures for obtaining equipment/tool/material.
10. Substitute Equipment, tool or Material Used in Place of Correct One: Provide correct equipment, tool or material. Warn against use of substitutes in job procedures and in job instruction.
11. Design of the Equipment or Tools Create Operator Stress or Encouraged Operator Error: Review human factors engineering principles. Alter equipment or tool to make it more compatible with human capability and limitations. Review purchasing procedures and specifications. Check out new equipment and job procedures involving new equipment before putting into service. Encourage employees to report potential hazardous conditions created by equipment design.
12. General Design or Quality of the Equipment or Tool Contributed to a Hazardous Condition: Review criteria in codes, standards, specifications, and regulations. Establish new criteria as required.

B. Environment As a Contributing Factor

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1. Location and Position of Equipment, Material or Employee Contributed to a Hazardous Condition: Perform job safety analysis. Review job procedures. Change the location, position, or layout of the equipment. Change position of employee. Provide guardrails, barricades, barriers, warning lights, signs, or signals.
2. Hazardous Condition Not Recognized: Perform job safety analysis. Improve employee ability to recognize existing or potential hazardous conditions. Provide test equipment, as required, to detect hazard. Review any change or modification of equipment, tools or materials.
3. Hazardous Condition Not Reported: Train employees in reporting procedures. Stress individual acceptance of responsibility.
4. Employees Not Informed of Hazardous Conditions and or With Interim Avoidance Procedure: Review job procedures for hazard avoidance. Review supervisory responsibility. Improve supervisor-employee communications. Take action to remove or minimize hazard.
5. Employees Not Supposed to be in the Vicinity of the Equipment or Material: Review job procedures and instruction. Provide guardrails, barricades, barriers, warning lights, signs, or signals.
6. Hazardous Condition Was Created by the Location of the Equipment or Material Not Visible to Employees: Change lighting or layout to increase visibility of equipment. Provide guardrails, barricades, barriers, warning lights, signs or signals, floor stripes, etc.
7. Insufficient Workspace: Review workspace requirements, modify as required.
8. Environmental Conditions a Contributing Factor: Monitor, or periodically check, environmental conditions as required. Check results against acceptable levels. Initiate action for those found unacceptable.

C. People: As a Contributing Factor

1. No Written or Known Procedure (Rules) for the Job: Perform job safety analysis and develop safe job procedure.
2. Job Procedures Did Not Anticipate the Factors That Contributed to the Accident: Perform job safety analysis and change job procedure.

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3. Employees Did Not Know the Job Procedure: Improve job instruction. Train employees in correct job procedures.
4. Employee Deviated From the Known Job Procedure: Review employee requirements for the job. Improve employee selection. Remove or transfer employees who are temporarily, either mentally or physically, incapable of performing the job.
5. Tasks In Job Procedures Were Too Difficult to Perform (For Example Excessive Concentration or Physical Demands): Change job design and procedures.
6. Job Structure Encourages or Requires Deviation From Job Procedures (Fore Example Incentive, Piecework, Workplace): Change job design and procedures.

D. Personal Protective Equipment (PPE)

1. Appropriate PPE Not Specified for the Task or Job: Review methods to specify PPE requirements.
2. Appropriate PPE Not Available: Provide appropriate PPE. Review purchasing and distribution procedures.
3. Employees Do Not Know How to Use and Maintain PPE: Improve job instruction.
4. PPE Not Used Properly When Injury Occurred: Determine why and take appropriate action. Implement procedures to monitor and enforce use of PPE.
5. PPE Not Adequate: Review PPE requirements. Check standards, specifications, and certification of the PPE.
6. Emergency Equipment Not Readily Available: Install emergency equipment at appropriate locations.
7. Emergency Equipment Not Properly Used: Incorporate use of emergency equipment in job procedures.
8. Emergency Equipment Functioned Improperly: Establish inspection/monitoring system for emergency equipment. Provide for immediate repair of defects.

E. Management Systems As a Contributing Factor

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1. Failure By Supervisor to Detect, Anticipate or Report Hazardous Condition: Improve supervisor capability in hazard recognition and reporting procedures.
2. Failure By Supervisor to Detect or Correct Deviations From Job Procedure: Review job safety analysis and job procedures. Increase supervisor monitoring. Correct deviations.
3. No Supervisor and Employee Review of Hazards and Job Procedures for Tasks Performed Infrequently: Establish a procedure that requires a review of hazards and job procedures (preventive actions) for tasks performed infrequently.
4. Supervisor's Responsibility and Accountability Inadequately Defined and Understood: Define and communicate supervisory responsibility and accountability. Test for understandability and acceptance.
5. Supervisor Inadequately Trained to Fulfill Assigned Responsibility in Accident Prevention: Train supervisors in accident prevention fundamentals.
6. Failure to Initiate Corrective Action For Known Hazardous Condition That Contributed to the Accident: Review management safety policy and level of risk acceptance. Establish priorities based on potential severity and probability of recurrence. Review procedure and responsibility to initiate and carry out corrective actions. Monitor progress.

6.6 DETERMINING PREVENTABILITY OF VEHICLE ACCIDENTS

Listed below are a series of questions that may be used in determining preventability. Additional questions may be needed and used to suit local conditions provided a uniform procedure is followed in all cases. It is important that every decision be made on the basis of facts with impartiality and fairness.

A. Intersection Accidents

1. Did the employee approach the intersection at a safe speed for the condition?
2. Was the employee prepared to stop before entering the intersection?
3. At a blind corner did the employee pull out slowly, ready to shift his/her right foot to the brake pedal?

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4. Did the employee make sure the other driver would stop for a traffic light or stop sign?
5. Did the employee obey all traffic signs?
6. Did the employee signal well in advance of his/her change in direction?
7. Did the employee turn from the proper lane?
8. Was the employee alert for the turns of other vehicles?
9. Did the employee avoid overtaking and passing in the intersection?
10. Did the employee refrain from jumping the starting signal or riding through the caution light?

B. Rear End Collision

1. Was the employee maintaining the safe following distance, namely one (1) car length for every ten (10) miles per hour of travel? (This distance should be doubled at night and doubled again in wet weather.)
2. Was the employee keeping his/her eyes and mind ahead of the car in front?
3. Did the employee approach the green traffic light cautiously expecting the driver ahead to stop suddenly on the signal change?
4. Did the employee keep from skidding?

C. Backing Accidents

1. Did the employee have to park so close to the car ahead as to require backing to leave the parking space?
2. Was it necessary to drive into the narrow street, dead end alley, or driveway from which the employee backed?
3. If the employee could not see where they were backing did the employee use proper precaution? (Failure to do any two of the six would

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warrant a "no" answer):

- a. Did the employee look all around the vehicle before getting in?
 - b. Did the employee back immediately after looking?
 - c. Did the employee use his/her horn while backing?
 - d. Did the employee look to the rear without depending on the rear vision mirror?
 - e. If the distance was long, did the employee stop, get out, and look around occasionally?
4. Did the employee back slowly?
 5. Did the employee judge his backing clearance accurately?

D. Pedestrians

1. Did the employee drive through congested sections, expecting that pedestrians would step in front of his/her car?
2. Was the employee prepared to stop?
3. Did the employee keep as much clearance between his/her vehicle and parked cars as safety permitted?
4. Did the employee refrain from passing vehicles that had stopped to allow pedestrians to cross?
5. Did the employee refrain from jumping the starting signal or riding through the caution light?
6. Was the employee aware of groups of children and were they prepared to stop if one ran into the street?
7. Did the employee give all pedestrians the right-of-way?
8. Did the employee refrain from passing school buses which were stopped?

E. Pulling From The Curb

1. Did the employee look front to rear for approaching and overtaking traffic immediately before starting to pull out?

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2. Did the employee look back rather than depend upon rear vision mirror?
3. Did the employee signal before pulling from the curb?
4. Did the employee start out only when his/her action would not require traffic to change its speed or direction in order to avoid him/her?
5. Did the employee continue to glance back as they pulled out?

F. Skidding

Was the employee keeping at least twice the safe following distance for dry pavement - one car length for every 10 mph of speed?

G. Parked

1. Was the employee parked on the right side of the road?
2. Was it necessary to park near the intersection?
3. Did the employee have to park on the travel part of the highway, on a curve or on a hill?
4. Where required, did the employee warn traffic by flag or flare?
5. Did the employee park parallel to the curb?
6. Was it necessary to park so close to the alley or directly across from the driveway?

H. Head-On Collisions

1. Was the employee on his/her side of the road?
2. Did the employee take proper evasive actions?
3. Was the employee's speed too great for conditions?
4. Was the employee's vehicle under control?

I. All Others

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1. Could the employee have done anything to avoid the accident?
2. Was the employee's speed safe for conditions?
3. Did the employee obey all traffic signals?
4. Was the employee's vehicle under control?
5. Had the employee followed the routing and delivery instructions?
6. Did the employee call in for help when in doubt?
7. Did the employee report this accident as soon as they returned?
8. If involved in a high speed chase, did the employee have his/her siren, blue lights, flashers and headlights on?
9. Did the employee follow all office policies?
10. Has this employee been involved in other auto accidents in the past 36 months?
11. Did the employee secure all information necessary for a thorough investigation of this accident?